Partner Reported Opportunities (PROs)
For Reducing Methane Emissions

Redesign Blowdown Systems and Alter ESD Practices

Compressors/Engines ■
Dehydrators □
Pipelines □
Pneumatics/Controls □
Tanks □
Valves □
Wells □
Other □

Applicable sector(s):

■ Production ■ Processing ■ Transmission and Distribution

Partners reporting this PRO: Southern California Gas Company, Chevron

Other related PROs: Close Main Valves and Unit Valves Prior to Blowdown, Design Isolation Valves to Minimize Gas Blowdown Volumes, Move Fire Gates in to Reduce Venting at Compressor Station

Technology/Practice Overview

Description

When compressors are taken offline for maintenance or the system shuts down, the gas within the compressors and associated piping is manually vented to the atmosphere (i.e., blowdown). Emergency shutdown (ESD) systems are designed to automatically evacuate hazardous vapors from sensitive areas during plant emergencies and shutdowns. Some ESD systems route these vapors to a flare stack where they are combusted, while other systems simply vent the evacuated vapors to the atmosphere via a vent stack.

Partners report that modifying ESD vents and blowdown piping enables collection and re-routing of the gas to the sales line, the fuel box, or to lower pressure mains for non-emergency use (e.g., ESD testing).

Methane Savings

347 Mcf/yr

Costs

Capital Costs (including installation)
■ < $1,000 □ $1,000-$10,000 □ > $10,000

Operating and Maintenance Costs (Annual)
■ < $100 □ $100-$1,000 □ > $1,000

Payback (Years)

□ 0-1 ■ 1-3 □ 3-10 □ > 10

Principal Benefits

Reducing methane emissions was:

■ **A primary justification for the project** □ **An associated benefit of the project**

Operating Requirements

Redesign of blowdown systems and altering ESD practices should be done in accordance with acceptable industry safety standards (OSHA, API, ANSI, ASME, PSM).

Applicability

This practice applies to all compressor stations.

Methane Emission Reductions

Rerouting combustible gases eliminates potential hazards in the operating area as well as reducing methane emissions. Emission savings vary by compressor station size, operating pressure, and facility complexity. For one partner, installation of a blowdown recovery system at 7 compressor stations recovered 1,155 Mcf of gas that would have otherwise been vented to the atmosphere. An additional 1,275 Mcf savings was obtained by piping connections that lowered atmospheric venting pressures to approximately 60 psi.

Economic Analysis

Basis for Costs and Savings

Methane emission reductions of 347 Mcf/yr apply to one compressor station based on partner reported savings.

Discussion

This practice can provide payback in less than three years. Gas savings from rerouting blowdown systems to a sales line or for local fuel use should justify the piping and operating costs.